DOCUMENT RESUME

ED 172 654 HE 011 391

TITLE	Appalachian Professional Development Center. Final Report.
INSTITUTION	West Virginia Coll. of Graduate Studies, Institute.
SPONS AGENCY	Fund for the Improvement of Postsecondary Education (DHEW), Washington, D.C.
PUB DATE	78
GRANT	G007603551
NOTE	57p.
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	*Adult Students; Autoinstructional Aids; Cost Effectiveness; Course Evaluation; *Curriculum Development; *Delivery Systems; Demonstration Programs; *Graduate Study; Higher Education; *Independent Study; Learning Laboratories; Noncampus Colleges; *Rural Areas; Systems Approach
IDENTIFIERS	*West Virginia College of Graduate Studies

ABSTRACT

Through support from the Fund for the Improvement of Postsecondary Education, a model for providing graduate programs to full-time employed adults residing in remote locations of southern West Virginia was designed by the West Virginia College of Graduate Studies, a college that does not have a campus. The essence of the delivery model was to establish resource centers in remote locations that would enable students to complete coursework through use of mediated and printed self-instructional materials. Courses were constructed based on a systems model for instructional development. Workshops and seminars and demonstrations of the benefits of the model were conducted to gain full college commitment to the project. Six courses were developed and implemented, and a total of 597 students participated in the courses over two years. Attitudes toward the courses were surveyed, and approximately 80 percent of students indicated a positive attitude toward the course methods. Favorable results were also obtained from a cost analysis of the project. The effect of the program on the college is discussed. Course descriptions, course enrollment data, a sample attitude assessment instrument and results of course evaluation, sample formative evaluation instruments, and cost analysis instruments are appended. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

HE

Appalachian Professional Development Center

Final Report

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

West Virginia College of Graduate Studies
Institute, West Virginia

ED172654

Fund for the Improvement of Postsecondary Education

Grant Number G00760 3551

Project Dates and Grant Awards:

August 1, 1976 - July 30, 1977:	$ 77,262
August 1, 1977 - August 30, 1978:	77,330
Total: 25 months	$ 154,542

Project Director

Jerry W. Klein
Assistant Professor of Education
West Virginia College of Graduate Studies
now at
Department of Education
University of North Carolina
Wilmington, North Carolina 28405
(919) 791-4330

HE 011 391

EXECUTIVE SUMMARY

APPALACHIAN PROFESSIONAL DEVELOPMENT CENTER

The West Virginia College of Graduate Studies (CGS) received a two year grant from the Fund for the Improvement of Postsecondary Education (FIPSE) to design a cost effective model for providing graduate programs to full-time employed adults residing in remote locations of southern West Virginia. The project was designed to enhance the existing efforts of the College which does not have a campus, offers only post-baccularеate work, offers classes in the evening throughout the southern region of the state, and relies to a large extent on the use of part-time adjunct faculty.

The essence of the delivery model was to establish resource centers in remote locations that would enable students to complete course work through use of mediated and printed self-instructional materials. Courses were to be constructed by adapting materials developed at other universities and colleges. It was anticipated that this instructional delivery and development model would reduce the costs of offering courses in remote locations and provide a form of instruction that would meet the needs of the working adult graduate student.

One major set of activities of the project involved the construction of courses following a systems model for instructional development and then implementing the courses in remote locations. A second set of activities involved specific efforts at gaining full CGS commitment to the project and insuring long term continuation of course operation. By the use of workshops and seminars and by demonstrating the benefits of "model" courses developed in the project, it was anticipated that the College would move in the direction of using instructional technology in attaining its mission of providing quality graduate education to the working adult at a minimum cost.

The project had several concrete results. First, six courses were developed and implemented in remote locations in the southern region of the state and a

total 597 students participated in the courses during the two years. An instrument assessing attitude toward the courses was developed and results of its administration indicated that approximately 80% of the students had a positive a attitude toward the course methods. This same general finding applied to both adjunct and full-time faculty, suggesting that the project provided a viable method for insuring the quality control of courses taught by part-time adjunct faculty.

A cost analysis of the project suggests that the development and delivery model is economical. Even though development costs are relatively high, courses developed through the project reduce average course operating cost by $400.00 compared to non-project courses offered in remote locations by the College. The delivery model reduced instructor travel time by almost 50%, and, though total faculty time spent in conducting a project course was reduced on the average by 114 hours a semester compared to non-project courses, there was only five hour difference in faculty-student contact time when total time for instruction is compared between project and non-project courses.

The project efforts and activities appeared to have a significant effect on the College. Most faculty and administrators recognized the potential of the project as one means of meeting the College's mission and even though determining the benefits of predesigned instruction for adjunct faculty was not a goal of the project, such benefits were viewed favorable and received the greatest interest by the College faculty and administration. Several direct actions were taken by the College as a result of the project. First, a college-wide reorganization committee requested that a new position be established for instructional design. Funds for the position and activities were requested in the 1978-79 budget. Also, deans in two of the College's four divisions requested positions for their own instructional designer. In addition to these effects, two courses are currently being developed according the project model and all courses developed

in the project continue to operate as designed. While instructional development positions were not approved by the Board of Regents, CGS will sponsor summer grants to faculty for instructional development. It seems, then, that the project efforts will continue to make a significant contribution to the College in its efforts at providing quality graduate programs to the working adult.

APPALACHIAN PROFESSIONAL DEVELOPMENT CENTER

Final Report
October, 1978

The West Virginia College of Graduate Studies (CGS) received a two year grant from the Fund for the Improvement of Postsecondary Education to design and implement a cost-effective model for providing graduate education programs to full time employed adults residing in remote location. This paper reports (a) the nature of the problem and (b) the design, results, and recommendations of the project. Products developed through the project are also included in the appendix.

Nature of the Problem

The major activities of the project were directed at designing a system for delivering graduate programs in remote locations by enhancing the present efforts of the College which was established in 1972 and given the mission of providing a viable graduate curriculum for citizens of central and southern West Virginia. In meeting its mission, CGS adopted a unique structure. The College has no campus and offers only post-baccularеate work. Faculty are located in leased facilities at undergraduate institutions in Charleston and Beckley and all classes are held in the evening at locations throughout the southern region of the state. It should also be noted that the College relies heavily on the use of part-time faculty.

While this structure has been successful in providing quality programs in the Charleston area, the CGS model failed to resolve many of the same problems encountered by more traditional institutions in meeting the needs of the working adult: (a) High cost in faculty time spent in driving to classes, (b) a poor curriculum, (c) a mode of instruction that relies on lecture and time-based instruction which does not adapt to the time constraints imposed by the student's job, and (d) lack of quality control of courses taught by adjunct

faculty. With these problems and the mission of the College as the focus, the objective of the project was to develop a cost-effective graduate education model for serving the working adult student residing in geographically isolated areas.

The essence of the delivery model was to establish resource centers in remote locations which would enable students to complete graduate courses on an individual basis. The strategy for developing courses was to use existing materials developed through projects and grants at other institutions.

In attaining the objective, two related problems surfaced early in the project: (a) Gaining full faculty support and (b) insuring that project efforts would continue after grant funds expired. These two problems first became explicit during sessions and discussions during the FIPSE project directors meeting dealing with institutional commitment and change. Subsequent to this meeting, it was decided to make direct efforts early in the project to gain the support of all faculty and academic programs within the College.

The importance of "project survival" became apparent during the early stages of course development when inquiries to colleges and universities were made about the availibility of instructional materials. It was discovered that a large amount of materials no longer existed because either a project had ended or the persons responsible for developing a set of material had left the institution. Consequently, an explicit objective of the project was to insure that courses designed through the project would continue to operate after the funds terminated.

Project Design, Results, and Recommendations

The efforts of the project consisted of three major sets of activities: (a) Course development and delivery, (b) cost-analysis and evaluation, and (c) long term College change and commitment. This section of the report discusses

the design, results, problems, and recommendations with respect to the three sets of activities.

Course development and delivery

The design of the project was to develop courses that would permit students to complete assignments on an independent basis through use of mediated and printed self-instructional materials housed in centers in remote locations. It was intended that courses would first be implemented in one location during initial tryout, then conducted in a second location the following semester, and then utilized throughout the southern region of the state in subsequent semesters. Courses were systematically developed according to the following procedures: (a) Derive course goals and units, (b) develop unit objectives and assessment instruments, (c) select instructional activities and materials for objectives, (d) implement, tryout, and revise the course, (e) develop and print learning guides and handbooks. Learning guides are manuals specifying course goals, units, objectives, assessment criteria, procedures, and resources. Handbooks are manuals of information sheets, exercises, self-checks, and related student response activities.

Actual course development activities followed the proposed procedures and five courses were fully developed. A sixth course was designed. However, learning modules developed and published commercially were used without substantial development effort. Course descriptions are given in Appendix A.

A total of 597 students participated in these courses during the two years. The number of students enrolled in the courses by semester is shown in Figure 1 of Appendix B and the number of students enrolled in courses conducted by full time and adjunct faculty in shown in Figure 2 of Appendix B.

An instrument measuring student attitudes was developed and the results of its administration is presented in Appendix C. The results suggest that approximately 80% of the students had a positive attitude towards the courses with

respect to methods, use of their time, adequacy of methods, teacher effectiveness, and course relevance.

Generally the process used to design, develop, and deliver courses appears to be valid and effective. However, several problems in course development and delivery were identified. First, it seems that the project was trying to accomplish too much in the given time frame. Consequently, adequate attention was not given to course selection and in deriving course objectives. Courses were selected more on a basis of ease in developing than on need and objectives were based more on traditional content structure than on student needs and program goals.

The problem of locating and receiving resources was mentioned above. Materials were difficult to identify and once potential materials were identified it was difficult to receive copies. Apparently, few institutions are prepared to disseminate mediated products produced through course development projects. Also, many resources covered too broad a content area to be adequately adapted to our courses. Problems were also encountered in trying out courses for first time in remote locations. During the second year of the project, courses were developed and implemented in the Charleston area first and then implemented in the remote locations.

With respect to developing courses several recommendations can be made. First, a considerable effort and time must be given to front-end analysis. Courses identified for development must be carefully selected on a basis of priority, need, feasibility and economics. Course objectives also must be thoroughly analyzed and derived. Second, more time must be allocated to developing courses. Perhaps a semester should be spent in deriving course objectives and identifying resources, a second semester used for development, and a third for initial tryout and revision. Third, higher education in general needs a system for disseminating products developed through course development projects,

and institutions need to do better instructional design work by validating the learning effectiveness of products and developing smaller "chunks" of materials and thus enabling others to use the materials in designing their courses.

With respect to the delivery of courses, several problems were identified that need to be taken into consideration in future efforts. First, it seems that the student's time is not as flexible as initially assumed. It appears that full-time employed students have a fairly rigied schedule that restricts them to attending instructional activities one night a week. Students seem to block out one night a week for class attendance. Consequently, it appears that the "center" approach is no more convenient than holding class one night a week. However, independent learning activities are needed to allow students to complete course work at their own rate. That is, students many times are not able to attend class sessions because of job or family responsibilities or weather conditions and need to have the opportunity to complete course assignments according to these constraints.

Another problem in course operation was that of managing resources when multiple sections of the courses were offered in several locations simultaneously. A tremendous amount of project staff time was devoted to scheduling and transporting resources between locations.

With respect to course delivery, the following recommendations can be offered. First, the general model discussed above appears to be a feasible and practical solution to meeting the needs of the working adult student. It appears that adjunct instructors benefit from having predesigned courses available to them. Through the use of the developed courses, the College has assurance that students learn course intentions and adjunct faculty can add their personal experience in conducting a course without spending a large amount of time in course prepation.

It seems that future projects involving a technological approach to

meeting the needs of the working adult, efforts should be made at studying the needs of this student with respect to time constraints. Perhaps courses should be developed that utilize more at-home learning activities. Also, future efforts in instructional development need to look at the long term use of courses and design a management system in the initial stages of the project.

Evaluation and Cost Analysis

Evaluation efforts of the project consisted of two sets of activities: Course evaluation and cost analysis. With respect to course evaluation, staff directed their efforts at formative evaluation during tryout of courses and at assessing student attitudes. Formative evaluation instruments were administered throughout the first two offerings of a course (presented in Appendix D). Information collected from the instruments was used to revise the courses.

The results of the assessment of student attitudes were positive. The findings are shown in Appendix C and can be summarized as follows: (a) The students felt that course time was more flexible and that their time was better used than in more traditional courses, (b) students felt that the instructional methods were successfully implemented, and (c) the students felt that the instructors were successful in managing the course.

A major component of the evaluation was to determine the costs of developing and offering courses through the project. During the initial stages of the project, an instrument was designed to collect data pertaining to (a) faculty time spent on course design, development, and operation and (b) direct costs for materials and production. The initial instrument was difficult to use and another instrument was developed for use in the second year of the project. Both instruments are given in Appendix E. In addition to collecting data on course costs, the second instrument collected data pertaining to faculty time spent on various course functions such as instruction, evaluation, and travel. Hence, the cost analysis procedures were designed to answer the following questions: How much does it

cost to develop a course? How much does it cost to operate a course? How is faculty time utilized in conducting a project course different from faculty time utilized in conducting a more traditional course?

With respect to the first question, data pertaining to faculty time spent on design courses and direct costs for production are shown for each course in Figure 1 below. Faculty time devoted to course design and development ranged from 110 hours to 322 hours and direct costs for production ranged from $87.70 to $2,922.23. With these large variation in costs, it is difficult to state a specific value for the cost to develop a course. Cost for development will depend on several factors. Obviously, if existing materials match with the objectives and content identified by the instructors then cost will be quite low. This is especially true if materials are "self-sufficient" printed modules with high instructional effectiveness as was the case with the course titled Ed. 540 shown in Figure 1. A second factor is the number of people involved in the course design. If a course is to be developed by a committee of faculty and designed to meet specific needs of a program or department then considerable time will need to be devoted to front-end analysis which results in high development costs.

In analyzing operating course costs, faculty conducting FIPSE project courses and non-FIPSE courses completed the instrument shown in Appendix E on a weekly basis. Data was collected on five FIPSE courses and four non-FIPSE courses offered in remote locations during the 1977-78 academic year. The results are summarized below in Figures 2 and 3. As shown in Figure 2, if development cost are averaged over a five year period, the average cost to operate a course developed through the project is $2,302.57, while the average cost to conduct a non-FIPSE course is $2,725.32, which represents a savings of $400 per course. It should also be noted that project courses cut travel costs in half and that recurring cost for materials, printing, and photocopy are about the

Figure 1

Development Cost Per Course

Course	Faculty			Production				Total Faculty + Production
	Hours	% of CGS Semester Time	Cost*	Materials	Printing	Photocopy	Total	
1. Ed. 530	201	23	2,300	1,770.50	97.37	222.41	2,090.28	4,390.28
2. Ed. 535/532	163	20	2,000	851.30	60.57	9.71	921.58	2,921.58
3. Ed. 500	32	4	400	1,399.70	231.03	237.03	1,868.17	2,268.17
4. Ed. 531	322	40	4,000	855.15	84.91	1.94	942.00	4,942.00
5. Ed. 540	110	14	1,400	0	32.32	55.38	87.70	1,487.70
6. Ed. 536	128	17	1,900	2,868.66	29.20	24.37	2,922.23	4,822.23
Mean	159	20	2,000	1,290.89	89.23	91.96	1,471.99	3,471.99

*Based on $10,000 Semester Salary and Benefits

Figure 2

Mean Course Operating Cost For
FIPSE and Non-FIPSE Courses
Offered at a Distance

Category	Operating Cost (Dollars)*	
	Mean FIPSE n=5	Mean Non-FIPSE n=4
1. Development (Averaged over 5-year period)	694.40	0
2. Travel		
a. Expenses	135.66	430.00
b. Faculty Salary	439.00	718.00
c. Total	642.50	1,148.00
3. Instruction Faculty Salary* for Planning, Instruction, and Evaluation	899.00	1,490.00
4. Materials, Printing, and Photocopy	66.67	87.32
Total	2,302.57	2,725.32

*Costs for faculty were based on $10,000 semester salary and benefits

same for FIPSE and non-FIPSE courses.

It appears then that even though development costs are high, the courses developed through the FIPSE project reduce operating cost by almost $400 when compared to non-FIPSE courses that employ a more traditional delivery (instructors driving to locations every week for a three hour lecture).

Questions pertaining to how faculty time is utilized in teaching a course at a distance were also addressed in the cost analysis procedures. Data were collected and analyzed for the same FIPSE and non-FIPSE courses discussed above. The results, summarized in Figure 3, indicate that FIPSE project courses reduced faculty time in planning, evaluation, and travel. The results also suggest that faculty time spent in large group instruction is substantially lower for FIPSE courses but that small group and one-to-one faculty-student time was substantially increased. It is interesting to note that while FIPSE courses cut faculty time spent on all course functions by 114 hours there was only a five hour difference in faculty-student contact time when total time for instruction is compared (large group plus small group instruction). This factor is of major importance when one considers that students living in remote locations have only class time as an opportunity to interact with college professors.

In summary, it appears that the model used to design, develop, and deliver courses will reduce operating costs, increase faculty-student on-to-one contact time, reduce travel time for faculty, and still insure that students learn the objectives of the course. It also appears that the cost-analysis procedures and instruments used in the project were valid and efficient and provided useful information in answering some basic questions concerning the economics of the project design.

College commitment and change

Gaining total college commitment to the project and insuring long term continuation of the project after FIPSE funds expired received major attention throughout the project.

Figure 3

Mean Faculty Hours and
Mean Percent Semester Faculty Time
on FIPSE and Non-FIPSE Course Functions

Course Function	Mean Faculty Hours		Mean Percent Faculty Semester Time	
	n=5 FIPSE	n=4 Non-FIPSE	n=5 FIPSE	n=4 Non-FIPSE
A. Planning	13.70	69.16	1.82	8.53
B. Large Group Instruction	8.1	30.81	1.06	3.79
C. Small Group Instruction	21.0	3.75	3.40	6.45
D. Evaluation	16.0	35.69	2.97	4.27
E. Travel	33.0	58.13	4.39	7.18
F. Total Course Time	83.90	197.54	13.38	22.08

Creating long term college change within the context of the project and the nature of CGS can best be thought of as assisting the College to move in the direction of utilizing instructional technology to attain its mission of providing quality graduate education at a minimum cost. The general strategy for attaining this change was to (a) keep the project effort "low key" by first developing and demonstrating "model" courses and gradually involving additional faculty, (b) informing faculty and administrators through seminars of the nature of systematic instructional development and its potential to CGS, and (c) assisting all faculty expressing an interest in instructional design as the interest surfaced.

In addition to the above efforts, the project staff become actively involved in college-wide long range planning and in divisional planning processes. That is, the project was seen to be an integral part of a larger effort: College change and renewal. Within this context, the project sponsored consultants to design and direct a program for the Division of Education to identify major problems and needs in meeting its mission. One component of the program involved a Division wide workshop on problem identification. This workshop was held on a Saturday morning and every full time faculty member attended. The importance of this activity was also indicated by the fact that a large number of adjunct faculty also attended the session including top level administrators from the West Virginia Department of Education. While a large number of items were identified, one issue of great importance and relevance to the nature of the project received a great deal of discussion: What is graduate education and what is continuing education? While the Division has not answered this question, it is in the process of addressing the issue.

The basic question needs to be addressed before significant change can occur in higher education in meeting the post-baccularеate education needs of the working adult. Should courses and programs be directed towards professional

competencies directly related to the specific needs of the adult student or should courses and programs emphasize the state of the research and theory? Can programs be designed to do both? Future projects dealing with graduate education for the working adult should address these fundamental questions befor initiating large scale efforts at designing new delivery systems.

In addition to directing efforts toward broad College change, the project made specific efforts at insuring that courses would continue to operate in the long term. Each course, after initial development and tryout was subsequently taught by a faculty member who was not directly involved in the design of the course. After a course was taught by this faculty member, adjunct faculty were selected to teach the course. These actions resulted in several full time and adjunct faculty being capable of teaching project developed courses and thus insuring their continuation over several years.

The actions and efforts discussed above appeared to have a significant effect on the College. a College wide faculty committee on reorganization requested that a new position be established for instructional development. Funds for the position were requested in the asking budget. Deans in the two of the College's four divisions asked for their own instructional developers. Two courses, one in engineering and one in education are being developed during the next 1978-79 academic year and all courses developed in the project are in operation though the project director has left the College. While requested funds for instructional development were not appropriated to the College, CGS will sponser summer grants to faculty for instructional development. It appears that the FIPSE project has made a significant long term contribution to the College in its efforts at meeting the graduate education needs of citizens residing in the southern region of the State, and this contribution was recognized by the faculty and administration of the College.

Appendix A

Course Descriptions for Courses Developed Under the FIPSE Grant at the West Virginia College of Graduate Studies 1976-1978

Note: Learning Guides and Handbooks are available for courses listed in the appendix. Learning Guides specify course goals, units, objectives, assessment criteria, instructional resources, directions and alternatives for meeting the objectives of respective units.

Student Handbooks contain the following types of resources: (a) exercises, (b) written material providing critical information to supplement published materials, and (c) samples of completed assignments.

Copies of Handbooks and Learning Guides may be requested by contacting:

Dean, Division of Education
West Virginia College of Graduate Studies
Institute, West Virginia 25112

Course Descriptions

I. Ed. 530 Principles of Instructional Design

A. Intended Population: Teachers and curriculum specialists in any subject-matter area at all levels of education. No previous experience in instructional design is required.

B. Focus: The emphasis of the course is an application of principles of instructional design to existing courses. The content and skills focus on applying the theoretical work of Gagne to instructional planning.

C. Units:

1. Introduction to Instruction Design
2. Learning Task Analysis
3. Learning Objectives and Objective-Referenced Tests
4. Lesson Design
5. Prototype Production and Formative Evaluation
6. Supplementary Topics

II. Ed. 535 Workshop in Individualizing Instruction and
Ed. 532 Individualizing Reading Instruction

A. Intended Population: Teachers presently employed in Elementary and Secondary Schools, Reading Specialist, and Special Education Teachers.

B. Focus: The emphasis of the course is in organization, methods, and theory in designing "individualized" instructional programs.

C. Units:

1. Individual Differences
2. Developing YOUR System at Individualized Instruction
3. Developing Scope and Sequence
4. Preparing Instructional Materials
5. Classroom Organization
6. Evaluation and Record Keeping
7. Student and Teacher Responsibilities
8. Implementing Individualized Instruction

III. Ed. 500 The School Curriculum

A. Intended Population: Teachers, curriculum specialist, and school administrators.

B. Focus: The course deals with innovations in education and is organized around three areas: (a) underlying ideas stimulating educational change, (b) innovations within school components, and (c) alternative school models.

C. Units: Section I, Underlying Ideas Stimulating Educational Change

A. Mastery Learning

B. Humanizing Education
C. Individualizing Instruction
D. Accountability

Section II: School Models
A. Individually Guided Education (IGE)
B. Individually Prescribed Instruction (IPI)
C. Program for Learning in Accordance with Needs (PLAN)
D. The Parkway School
E. The House Plan
F. The Middle School
G. The British Infant School (open education)
H. The Montessuri School
I. Free Schools
J. Experienced Based Career Education (EBCE)
K. The Nongraded School

Section III: Innovative School Components
A. Space Use (open, pods, resource centers, etc.)
B. Time Use (flexible scheduling, year round school, etc.)
C. Personnel Utilization (team teaching, peer tutoring, etc.)
D. Instructional Management (self directed, LAPs, CMI, etc.)
E. Instructional Methods (CAI, inquiry teaching, role playing, etc.)
F. Curriculum Focus (interdisciplinary, needs approach, core, etc.)

IV. Ed. 536 Workshop in Multimedia Instruction

A. Intended Population: Education and training personnel

B. Focus: The course emphasizes skills in planning and producing different kinds of audiovisual materials for classroom situations.

C. Units:
1. Instructional Media in Perspective
2. Instructional Graphics Production
3. Audiovisual Equipment Operation and Maintenance
4. Pre-Production Planning
5. Production of Audiovisual Instructional Materials

V. Ed. 531 Use of Technology in Education

A. Intended Population: Instructional and administrative personnel in education, industry, and government.

B. Focus: The course serves as introduction to the concept of educational technology and the various ways that technology is presently being used in different educational settings.

C. Units:
1. Introduction to the Concept of Instructional Technology
2. Overview of Systems for Instructional Design and Development

3. Critical Components of Instructional Systems
4. Instructional Technology: Information Sources and Professional Activities
5. Topics in Instructional Technology
6. Selected Instructional Devices

Appendix B

Course Enrollment Data

Appendix B

Figure 1

Number of Students Enrolled

in

FIPSE Project Courses

Course	Term						Total
	Fall 76	Spring 77	Summer 77	Fall 77	Spring 78	Summer 78	
Ed. 530 Prin. Inst. Design	8	10	16	6	6	24	70
Ed. 535/ Rdng. 532 Ind. Inst.		34	43	35	8	66	186
Ed. 500 Curriculum			104	52	22	93	271
Ed. 531 Tech. in Educ.				15	7		22
Ed. 536 Multi-Media in Educ.					6	10	16
Ed. 540 Inst. Theories					5	27	32
Total	8	44	163	108	54	220	597

Appendix B

Figure 2

Number of Students Enrolled in Courses

Conducted by COGS and Adjunct Faculty

Course	COGS Faculty	Adjunct Faculty	Total
Ed. 530 Prin. of Instr. Des.	20	50	70
Ed. 535/Rdng. 532 Ind. Instr.	125	61	186
Ed. 500 Curriculum	124	147	271
Ed. 531 Tech. in Educ.	22	0	22
Ed. 536 Multi-Media Instr.	16	0	16
Ed. 540 Instr. Theories	5	27	32
Total	312	285	597

Appendix C

Attitude Assessment Instrument
and
Results of Course Evaluation

Appendix C

Figure 1

Results of Course Evaluation
Fall, 1976 - Spring, 1978

N = 171

ITEM	MEAN	% STRONGLY OR MOSTLY DISAGREE	% STRONGLY OR MOSTLY AGREE
A. Attitude toward course methods			
1. If given the opportunity, I would take another course taught by this method.	4.58	11	80
2. I would consider organizing courses I teach in the same way that this course was organized.	4.73	12	70
3. I would like most of my COGS courses to use this or similar methods.	4.55	13	65
6. I would have preferred to have more lectures in the course.	2.63	66	15
10. In general, I would have preferred more structure (e.g., schedules, deadlines) than this course included.	1.89	72	9
16. In general, when I take courses, I feel that I learn more from lectures than I do from individual conferences with instructors.	2.57	64	12
27. In general, I consider the individualized approach to instruction that was used in this course to be superior to the more traditional lecture-discussion approach to instruction.	4.49	7	71
B. Attitude toward use of time			
4. I would like to have had more opportunities for direct contact with my instructor during the course.	3.34	27	35

ITEM	MEAN	% STRONGLY OR MOSTLY DISAGREE	% STRONGLY OR MOSTLY AGREE
5. In my opinion, the method by which this course was taught increased instructor-student contact time.	3.96	25	47
14. The teacher met often enough with the students individually.	4.88	6	74
23. I feel that the individual conferences with the instructor were of value and benefit.	5.08	7	58
24. I feel that the individual conferences with the instructor helped to keep my motivated throughout the course.	4.68	16	57
26. In this course, the opportunity to interact with other class members was less than in most classes taught by more traditional methods.	2.27	72	7
C. Attitude toward adequacy of methods			
7. I usually understood what was expected of me in this course.	4.84	6	75
8. The way in which this course was organized and structured allowed me to make more efficient use of my time for my job and other activities.	4.38	16	63
9. The way this course was organized caused me to be confused throughout most of the course.	2.20	68	7
12. The grading of assignments was <u>not</u> fair.	1.40	92	2
13. Instruction in several of the units was <u>not</u> adequate.	2.44	64	8
15. The efforts made to individualize instruction in this course were successful.	5.06	5	77
18. Most of the learning guides were well written. That is, they clearly informed me as to what was expected of me and how to go about achieving the objective(s).	4.82	7	73

ITEM	MEAN	% STRONGLY OR MOSTLY DISAGREE	% STRONGLY OR MOSTLY AGREE
25. Most of the mediated resources (audio tapes, filmstrips, films, etc.) were useful to me in mastering the objectives of the course.	4.29	15	42
D. Teacher effectiveness			
11. The instructor provided appropriate and timely assistance when I needed it.	5.05	4	81
17. The instructor(s) seemed enthusiastic about the methods used to teach this course.	5.39	0	86
19. When the instructor(s) made class presentations, the presentations were well organized and easy to understand.	4.76	4	71
20. Overall, the instructor(s) did a good job in conducting the course.	5.20	2	85
21. The instructor(s) seemed genuinely interested in helping the students master the objectives of the course.	5.57	1	93
22. The instructor(s) provided good feedback on assignments.	5.20	5	82
E. Course relevance			
28. The ideas presented in the course are highly relevant to teachers.	5.20	6	83
29. The course in general was a waste of my time.	1.63	85	6
30. The assignments in the course were intellectually challenging.	4.59	8	69
31. Most teachers should take this course.	4.92	7	74

ITEM	MEAN	% STRONGLY OR MOSTLY DISAGREE	% STRONGLY OR MOSTLY AGREE
32. School adminstrators (principals and supervisors) should take this course.	4.92	7	74
33. If I had the opportunity and necessary support, I would try to use many of the ideas presented in this course.	5.14	5	83
34. In terms of content, this was one of the best education courses I have ever taken.	4.41	12	59
35. I have incorporated some of the ideas and skills learned in this course in my teaching.	4.53	11	56
36. I feel that I have increased my professional competence.	4.87	6	72
37. I would recommend this course to other professional educators.	4.93	7	75

Scale:

1 - Strongly Disagree
2 - Mostly Disagree
3 - Slightly Disagree
4 - Slightly Agree
5 - Mostly Agree
6 - Strongly Agree

Appendix D

Formative Evaluation Instruments

Education 531

Evaluation of Learning Resources and Activities

1. Resource (author, title): _____

2. Date used: _____

3. Time of day (check)

6-12 a.m.	
12-3 p.m.	
3-7 p.m.	
7-10 p.m.	

4. Approximate amount of time spent using the resource and completing the associated tasks: _____

	Yes	No	Please Explain
5. Was the resource available when you wanted to use it?			
6. Did you have any difficulty in having access to equipment required for using the resource?			
7. Was the reserve period the right length for this resource?			
8. Was the number of points assigned about right?			

	Strongly disagree	Mostly disagree	Slightly disagree	Slightly agree	Mostly agree	Strongly agree
9. I feel that I learned a lot from the resource.						
10. I feel that the time I spent using the resource was time well spent.						
11. The task was meaningful and interesting for me.						

Comments

Education 531

Unit Evaluation

1. Unit No.: _____

2. Date unit completed: _____

	Strongly disagree	Mostly disagree	Slightly disagree	Slightly agree	Mostly agree	Strongly agree
3. I feel that I learned a lot from the unit.						
4. The number of points assigned to the unit was appropriate for the amount of time I spent.						
5. The Learning Guide was clear and easy to follow.						
6. I knew what was expected of me at all times.						
7. The instructor's evaluation of my work was fair.						
8. The instructor gave me enough feedback on my work.						

9. The most helpful learning resources and/or activities were

10. The least helpful resources and/or activities were

11. If the unit involved completion of any tasks not keyed to specified resources, please comment on those tasks:

12. Please write a general comment about the unit.

Other comments (e.g. suggestions for alternative resources or tasks):

Education 530

USER EVALUATION REPORT OF INSTRUCTIONAL RESOURCES

Resource title: **Date:**

	Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. The resource was well-written and easy to read (or view).	1	2	3	4	5	6
2. The resource was one of the more important resources in the unit.	1	2	3	4	5	6
3. Directions were clear for the exercises in the resource.	1	2	3	4	5	6
4. The exercises were beneficial to me.	1	2	3	4	5	6
5. Generally I learned a great amount from the resource.	1	2	3	4	5	6

6. Approximate amount of time spent using the resource: _____

Ed. 530

USER EVALUATION REPORT OF INTERACTIONS WITH THE CLASS INSTRUCTOR

Date: Topic:

Circle one: Lecture Seminar Individual or Small Group Conference

	Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. The instructor's presentation was clear, well-organized, and easy to understand.	1	2	3	4	5	6
2. The instructor answered my questions.	1	2	3	4	5	6
3. I feel that I understood most of what was presented.	1	2	3	4	5	6
4. I feel that my time was well spent.	1	2	3	4	5	6

Education 530

USER EVALUATION REPORT OF LEARNING GUIDES

Learning Guide for Unit: _____ Date: _____

	Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1. The objectives were important to me.	1	2	3	4	5	6
2. The learning activities helped me complete the assignments.	1	2	3	4	5	6
3. The exercises in the Handbook were useful to me.	1	2	3	4	5	6
4. The samples of completed assignments were useful to me.	1	2	3	4	5	6
5. The directions for how to use the learning resources were clear.	1	2	3	4	5	6
6. The posttest was a fair test.	1	2	3	4	5	6
7. The criteria for evaluation of the assignments were clear and fair.	1	2	3	4	5	6

PLEASE COMPLETE THE NEXT PAGE, TOO.

8. The most helpful learning activities in the unit were:

9. The least helpful activities were:

10. There should be more instruction on:

11. There should be less instruction:

12. Amount of time devoted to mastering the unit objectives

    a. In the Resource Center/Library:

    b. Outside the Resource Center:

13. Please feel free to write any other comments here.

Appendix E

Cost Analysis Instruments

Initial

and

Final

Initial Cost Analysis Instrument

SYRACUSE UNIVERSITY

SCHOOL OF EDUCATION | Area of Instructional Technology

116 HUNTINGTON HALL | 150 MARSHALL STREET | SYRACUSE, NEW YORK 13210
315/423-3702

MEMO

TO:

FROM:

In order for COGS faculty and instructional support staff to plan future course development and implementation efforts, it is necessary to obtain fairly accurate descriptions of current development efforts. Different "kinds" of courses (i.e., on-campus lecture, off campus individualized, off campus flexible schedule) will be studied in different subject or content areas in order to construct some rough estimates of what kinds and amounts of resources will be required to develop and implement additional COGS courses. It is fairly obvious that there will be differences between content areas and course types, but the kinds and amount of differences are unknown.

The enclosed materials provide a simple (hopefully) vehicle for you to describe the resources used to design, develop and implement your course. Many alternatives were considered including a daily diary, monthly record and a semester estimate. The enclosed two page weekly record was selected as a compromise between the press for accuracy and the effort required to maintain such a record.

Your combined weekly records will not represent an exact picture of what is required to construct a course like yours, but the resultant scenario will certainly be more useful than the fuzzy abstract now used for course development planning.

Your course entitled _____
is one that can serve as a "model" for COGS to study. Not only will it be useful as a guide for planning, but also as a cite for testing this weekly record procedure.

DOCUMENTING COURSE DEVELOPMENT COSTS

These materials are intended to help you keep a record of all the various resources involved in developing new courses and instructional materials. "Resources" includes everything from your own time to the materials and equipment you use. To provide a standard procedure for recording these resource costs, the course development process has been divided into three stages so that you can indicate the kind of activity that was the occasion for a given expense. These stages are defined below. On the following pages you will find a copy of a form to use in reporting expenses along with instructions for its use.

Definitions

The process of course development has been divided into three major stages with a number of sub-stages. Each stage or substage encompasses a particular kind of activity. A specific development project may not include all of these activities and they may not always occur in the order given.

I. DESIGN: The activities involved in defining the content, determining the objectives, and organizing the instructional experiences that will comprise the course. This stage involves three characteristic activities.

1) Research: All activities involved in gathering the information needed to support the course development project. Such activities include determining student needs and entering capabilities, examining existing courses and materials in this subject area, and reviewing the content of the discipline or subject area.

2) Curriculum Decision-Making: This category includes the activities of outlining course content, defining objectives, and similar activities involved in deciding what will be taught, to whom, in what order, with what educational outcomes.

3) Content Development: Those activities which are directed towards creating the specific materials to be used in the course. This would include writing lectures, preparing excercises, and constructing tests. Not included here are activities related to reproducing or disseminating materials for actual classroom use.

II. PRODUCTION AND PURCHASING: This stage includes those activities involved in obtaining or reproducing the materials needed to support a course's instructional experiences. This includes such things as printing tests, ordering text books, obtaining audio-visual materials and equipment, and setting-up a classroom.

III. OPERATION: The final course development category includes all those activities that are involved in actually delivering the instruction to the students. "Operating" the course typically involves three kinds of activities.

1) Administration: Those activities necessary to providing the students with the instructional experience but not including the actual instruction or evaluation activities that are a part of the course. Administration activities include such things as registering students, traveling to class, and filling out reports.

2) Instruction: All activities involved in conveying the course content to the students. This includes lecturing, answering questions, and providing instructional help outside of class.

3) Evaluation: This category includes all those activities involved in evaluating student performance, and evaluating the performance of the instructional materials.

Within each of these stages, there are various kinds of expenditures. The following definitions outline three cost categories.

I. Time: The time in hours expended on a particular activity.

II. Materials and Supplies: Those items which are used up in conducting a particular activity. Such items might include typing paper, photographic film, and telephone conversations (and resulting charges).

III. Facilities and Equipment: This cost category covers the use of items which exist independently of this particular project (were not used-up solely for those activities). Such items would include typewriters, library books, office and classroom space, and audio-visual equipment.

In addition to these three cost categories, there may occasionally be an item which does not seem to fit anywhere, and a category called Other Support is provided for such items. An example would be free editorial assistance provided by your spouse in preparing a report.

The three activity categories and cost categories are combined in a matrix-like form for reporting and documenting your course development costs. This matrix and sample items for each category are given on the next page.

Reporting Form - An Example

As an illustration of how to categorize and report various expenses, the following list of items has been recorded on the sample form at the bottom of the page. Where possible, an estimate of dollar cost or value should also be provided.

1) Three hours you spent in the library looking for recent research on a subject of a class lecture;
2) Costs for books and dissertations ordered for personal research on course content, $50;
3) Cost of consultant hired to develop evaluation instruments, $200;
4) Ten hours you spent working with that consultant on testing procedures;
5) Five hours spent by your secretary typing the final exam;
6) Cost of printing 100 copies of the final exam at $.05 each, $5.00;
7) Ten hours you spent (total) in administering and grading the final exam;
8) Two hours you spent revising the final exam as a result of problems you found in its first administration;
9) Cost of three phone calls to evaluation consultant, $10;
10) Two hours you spent in a meeting with the Department Chairman discussing the course's objectives;
11) Two hours spent by the Department Chairman meeting with you on the course's objectives;
12) Cost for copy of Preparing Instructional Objectives you bought to help with preparing the objectives, $5;
13) Fifteen hours spent writing a course manual to help students through course;
14) Time spent traveling to class, three hours/week;
15) Cost of notebook purchased to record student grades, $3;
16) Cost of film rental for class presentation, $15;
17) Bell and Howell projector used for two hours to show movie (Projector from campus audio-visual services);
18) Slide projector used for one hour in a lecture (Personal projector brought from home);
19) Op-scan sheets bought to record test answers, $10;
20) Computer time used for test-scoring, $10;
21) One hour spent by your secretary ordering textbooks.

		Time	Materials/Supplies	Facilities/Equipment	Other
Design	Research	1	2, 12		
	Curric.	10, 11			
	Content	3, 4, 8, 13	9		
	Production	5	6		
	Purchasing	21			
Operation	Admin.	14	15		
	Instruc.		16	17	18
	Eval.	7	19	20	

REPORTING FORM FOR COGS COURSE DEVELOPMENT COSTS

Directions: Fill out the top part of the form with the requested information. On the lower half, list all the activities and expense items associated with this development project during this reporting period. For each item, indicate the object of the expenditure (i.e. you, your secretary, a book, the Xerox machine) and your best estimate of the amount of resource expended (i.e., hours, dollars). Transfer the number of each item to the matrix on the next page. Indicate where each expenditure falls by recording item numbers in the appropriate cells of the matrix. Use extra forms as needed.

NAME _____ COURSE PRODUCTS _____

DATE _____ REPORTING PERIOD _____ -TO- _____

AMOUNT OF TIME SPENT ON YOUR COURSE THIS WEEK: _____ Hrs.

AVERAGE NUMBER OF HOURS PER WEEK YOU DEVOTE TO ALL COGS ACTIVITIES: _____ Hrs./Wk.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

ACTIVITY \ RESOURCE	TIME	MATERIALS & SUPPLIES	FACILITIES & EQUIPMENT	OTHER SUPPORT
DESIGN — Research				
DESIGN — Curriculum Decision-Making				
DESIGN — Content Development				
PRODUCTION & PURCHASING				
OPERATION — Administration				
OPERATION — Instruction				
OPERATION — Evaluation				

NAME _____ DATE _____ COURSE PROJECT _____

Final Cost Analysis Instrument

Time and Resource Analysis of Course Activities

The College of Graduate Studies has received a grant from the Fund for the Improvement of Postsecondary Education (FIPSE) to develop "individualized" courses. As part of the project, a study is being conducted of FIPSE-type courses and other "kinds" of courses to construct some rough estimates of the kinds and amount of resources that will be required to develop and implement additional courses.

In addition to collecting data on cost and resource requirements of course development, the project is attempting to ascertain the differences in time spent on various kinds of course activities. The kind of questions the study is attempting to answer are as follows:

1. Do individualized courses decrease the amount of time faculty spend on course planning and preparation?

2. Do individualized courses increase the amount of one-to-one student-faculty time?

3. Do individualized courses decrease faculty time spent in traveling to classes?

4. Do individualized courses increase the amount of time faculty spend in evaluating students?

The enclosed materials provide a simple (hopefully) vehicle for you to describe the resources used to design, develop and implement your course. Many alternatives were considered including a daily dairy, monthly record and a semester estimate. The enclosed weekly record was selected as a compromise between the press for accuracy and the effort required to maintain such a record.

Your combined weekly records may not represent an exact picture of what is required to construct a course like yours, but the resultant scenario will be useful for future planning.

Your course is one that can serve as a model for COGS to study. Not only will it be useful as a guide for planning, but also as a means for testing this weekly record procedure.

Your cooperation and assistance in this study is greatly appreciated.

Documenting Course Resources

These materials are intended to help you keep a record of the resources and activities involved in developing and teaching a course. "Resources" include everything from the time you spend to the materials you use. Documentation for the study consists of two parts. Part I has the instructor or development team keep an account of time spent on various activities on a weekly basis. Part II deals with documenting direct costs for materials, printing, and photocopying that the instructor's secretary should be able to collect. Procedures and definitions for each part are described below.

Part I: Time Spent on Course Activities

To provide a standard procedure for recording time, the course development and teaching process has been divided into four categories. These categories and procedures are described below.

Definitions

Four kinds of development and teaching activities are specified on the weekly recording form.

A. Planning, Preparing, and Designing Instruction

All activities involved in defining the content, determining the objectives, designing instructional activities, and designing evaluation are included in this category. Example activities are:

Examining existing courses and materials, discussing content with associates, previewing film, writing objectives, preparing lectures, preparing exercises, constructing tests, preparing handouts, "setting up" the classroom, and evaluating the course.

B.1 Large Group Instruction

All activities that involve instruction with the total class are included in this category. Example activities are:

Presenting lectures, large group class discussions, class viewing of films or video tapes, guest lectures, student presentations to the class.

B.2 One-to-One and Small Group Instruction

Activities involving the instructor with one student or small groups of students are included in this category. Example activities are:

Small group discussions (less than total class), counseling individuals, discussing assignments with individuals, reviewing test results with individuals, and providing feedback on papers, tests, or products with individuals or small groups.
NOTE: If you write detailed feedback on course assignments, products, tests, or papers, include the time in this category.

C. Evaluation

Activities involved in assessing student performance are included in this category. Example activities are:

Grading papers, tests, and assignments; administering tests.

D. Travel

Time spent in traveling to class should be recorded under this category. Please specify the location of the class and number of trips made. A standard cost will be computed for each trip for a given location that includes mileage, tolls, meals, and lodging.

E. Other

If you spend time on activities that you are not able to classify in one of the above categories, please list and describe the activities on the back of the weekly form. Record the amount of time under category E.

Procedures

Please keep the weekly form in a convenient location in your office. On a daily or weekly basis record the number of hours spent on the various activities for your course. The days of the week are listed to assist you in keeping track of your time. The important data is total time per category per week.

To assist in analysis, the total amount of time you spend each week on all your college duties is needed. Please record the total number of hours you devote to all College activities in the space provided. One suggestion to help you keep track of this time is to record the total hours you devote to the college on a daily basis by recording the number of hours at the top or bottom of the form for each day.

Part II: Costs for Materials, Printing, and Photocopying

To collect data on direct costs for materials, printing, and photocopying, three forms have been developed. These forms should enable your secretary to record the needed data. Please give the forms to your secretary and give directions on how to record the needed information.

A. Directions for Form I: Costs of Materials

1. When you purchase materials, please record the amount of the purchase. Purchases include books, films, film rentals, folders, and other items used in preparing your course or for use in instruction.

2. Specify the category of the purchase as
   A - for preparing, planning, designing. For example, if you purchase a book to use as a reference in preparing a lecture, it is charged to this category (same as category A of the weekly recording form).
   B - for instruction. When you purchase materials to use with students in instruction, the costs are charged to this category (same as B in the weekly recording form).

B. Directions for Form 2: Cost of Printing

1. When you request printing, record the number of copies and the cost.

2. Specify the category of the cost as
   A - Preparing, planning, designing. For example, if you print copies of a course evaluation instrument the cost is charged to this category.
   B - Instruction. Costs for printing handouts, assignments, learning guides, outlines, and other items used by students are charged to this category.
   C - For evaluation. Costs for printing tests or other student evaluation instruments are included in this category.

C. Directions for Form 3: Cost of Photocopying

1. Record the date, beginning and ending numbers on the auditron and number of copies.

2. Specify the category as
   A - Planning, preparing, designing. When items are copied for your use in planning or designing a course, they are charged to this category.
   B - Instruction. When items are copied for instructional uses, the cost is charged to this category.
   C - Evaluation. Items copied for use in evaluating students, costs are charged to this category.

Note: When you make copies of student products or papers, record the cost under the appropriate category according to the purpose for making the copy. For instance, if you make a copy to use later in evaluating the course, the cost would be charged to A. If the purpose was to use the copy to show to other students as a "model of performance" the cost would be charged to B - instruction.

Note: Leave the last column on the form blank. A standard per copy photocopying cost will be used to compute total costs.

NAME _____

COURSE _____

WEEK _____ TO _____

		MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY SUNDAY	TOTAL
A. Planning, preparing, researching, designing instruction, lectures, activities, tests, evaluation.								
B. Instruction	Large group, class lectures, presentations, discussions, films.							
	One-to-one, small group interactions, instruction, feedback							
C. Evaluation of students, grading, administering tests								
D. Travel (to_____) Number of trips_____								
E. Other (number and specify on back)								

Total time on course _____

Number of hours devoted to all COGS activities this week _____

Form 1: Cost of Materials

Instructor _____ Course _____ Term _____

Enter name of materials, costs, and specify category as

A - Preparing, planning, and/or designing; or
B - Instruction

Material	Category	Costs

Form 2: Cost of Printing

Instructor_____ Course_____ Term_____

Enter title of item, number of copies, cost, and specify the category as

A - Planning,
B - Instruction, or
C - Evaluation

Item	Category	Number of copies	Costs

Form 3: Cost of Photocopying

Instructor_____ Course_____ Term_____

Enter date, beginning and ending number of the auditron, total number of copies, and specify the category as

A - Planning, preparing, designing;
B - Instruction; or
C - Evaluation

Date	Category	Begin	End	Number of copies	